NEW HAMPSHIRE LAKES

Members dedicated to protecting lakes

December 7, 2007

Mr. Paul Currier
NH DES Watershed Bureau
Hazen Drive
Concord NH

Dear Paul:
The Water Quality Committee of the New Hampshire Lakes Association has met on several occasions to review your proposed approach for developing lake assimilative capacity criteria along with anti-degradation regulations in the newly modified Water Quality Standards (CHAPTER Env-Ws 1700 SURFACE WATER QUALITY REGULATIONS).

First off, let me commend you for considering our earlier position on the strategy to develop nutrient standards developed by our committee and accepted by our Board of Directors on March 17, 2005:

1. *NH LAKES supports the development of nutrient criteria for nitrogen and phosphorus because they are critically important for water quality in New Hampshire's lakes and ponds.*

2. *NH LAKES strongly recommends that a published assessment, using existing data (from VLAP, LLMP and other certified sources), be provided by DES that correlates actual nutrient concentrations with lake tropic status (eutrophic, mesotrophic, and oligotrophic) as defined in VLAP and LLMP summary reports.*

3. *NH LAKES supports the DES proposal to use reference lakes in New Hampshire to develop "guidance numbers" for nitrogen and phosphorus concentrations in water and sediment.*

4. *NH LAKES urges DES to support the additional acquisition of actual measurements of nitrogen and phosphorus levels in both lake water and sediment.*

We are pleased that actual chlorophyll and phosphorus data were used to develop an empirical relationship and approach for predicting the assimilative capacity of a lake (see memo from P. Trowbridge of your department "Analysis of NH DES Data to Determine Preliminary Total Phosphorus Criteria for Freshwaters" dated August 5, 2005). However, we are concerned that your use of this relationship to determine assimilative capacity is flawed and will only lead to cause degradation to both pristine and challenged freshwater systems beyond what would be considered reasonable.

To be more specific, the approach presented to the WQSAC using Perkins Pond as the example (presented on April 6, 2006) sets the stage for what many of us had predicted but have been assured by both your staff and staff at the US Environmental Protection Agency (regional and national) would never happen; that a water quality standard to be used as a target for classifying impaired waters in a state would be used as a basis to allow degradation to our many pristine and relatively waters that we consider critically important to the economic, environmental and social wellbeing of the public. Moreover, even though the rules do contain a potential work- around for anti-degradation (in Env-Ws 1708.10), it can only lead to a misconception that all lakes should be allowed to approach their assimilative capacity which according to your scheme would allow for the waters to degrade down to a level that is essentially only 10 percent (in terms of Total Phosphorus concentration) below that level that is considered impaired.

The problem at hand arises due to your approach at defining numerical criteria for "high quality water". The narrative used to defines this in Env-Ws 1702.24 is: *""High quality surface waters" means all surface waters whose water quality is better than required by any aquatic life and/or human health water quality criteria contained in these rules or other criteria assigned to the surface water, or whose qualities and characteristics make them critical to the propagation or survival of important living natural resources."* Your current approach sets the numerical criteria for "high quality water " as a level just 10 percent below what would be considered impaired! Setting the margin or error, or as you term it "Reserve Assimilative Capacity" at such a low "distance" from the impaired state does not seem reasonable given that there are all sorts of unaccounted errors (the actual Phosphorus to Chlorophyll relationship that all this is based on did not account for at least 38 percent of the variation) in measurement as well as other factors that play an important role in the expression of productivity (as chlorophyll) for a given concentration of phosphorus (ie: photic zone extent, flushing rate, basin morphometry). We also need to consider that both data analyses through the regional technical advisory groups (Regions 1 and 2) for setting nutrient criteria came up with Phosphorus concentrations closer to 0.010 mg/l as the impairment criteria and region 1 (as well as Vermont for Lake Champlain) correlated this level to that which volunteer monitors could perceive a negative change in water quality/water use. It is surprising that using data for much more productive systems found in other New England states and New York resulted in a criteria recommendation even below the one currently recommended for use in New Hampshire.

Our committee expressed these concerns and discussed potential topics to address. Possible approaches would be to re-examine the logic and basis of only using a 10% margin of error given all of the uncertainty. In addition, we need to address how we can afford the necessary protection to our very pristine systems so that they remain in that condition as the federal anti-degradation rules state: *(3) Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected."*. Again, how to guarantee this would be critical. Do we set a new designation of pristine or better define the Outstanding Waters category? Might we also look to better define what is represented for the "Tier 1" and "Tier 2" conditions as it is counter-intuitive to consider a high quality water as Tier 2 anyway (unless the intention was to designate the productivity "distance" from an impaired water designation which may not be the direction that makes the most sense in erms of perception and message). IN all cases we really need to realize that the impaired condition criteria is really meant to only designate at least a marginal level for attempts at mitigation to bring back these impaired systems to some semblance of function for designated uses but it is not the standard to allow all our lakes to approach.

I hope this letter can serve as a starting point for constructive discussion on the matter of improving the strategy and language for developing water quality standards rules with numerical criteria that insure the preservation and maintenance of our outstanding freshwater resources as well as impart the correct message on how to deal with impaired waters without implying that our waters will be fine if they approach the impaired criteria level.

We are willing to further work with you on these matters as a committee, if necessary, or we are willing to work through our committee designee to provide any feedback warranted as you move through this process.

Sincerely

Jeffrey Schloss,
Chair, NH Lakes Water Quality Committee.